

CUPRESSUS ARIZONICA (CUPRESSACEAE) NEW TO THE DAVIS MOUNTAINS OF WEST TEXAS

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The Arizona Cypress, *Cupressus arizonica* Greene (Cupressaceae) has previously been reported to occur natively as a well-publicized population at a single Texas location in the Chisos Mountains (Vines 1960; Correll & Johnston 1979; Powell 1988; Simpson 1988; Cox & Leslie 1997; Powell 1998). This species is considered to be widely distributed throughout northern Mexico and the southwestern United States, including southern Arizona, southwestern New Mexico, and southern California (Vines 1960; Correll & Johnston 1979; Powell 1988; Cox & Leslie 1997; Powell 1998). In Mexico, Arizona Cypress is known from the Sierra Madre Occidental into extreme northeastern Sonora and Chihuahua in the west and southward on the east to southern Coahuila to the Sierra de Parras (Peattie 1950), and into Zacatecas. It is well known in the Maderas del Carmen Mountains in northern Coahuila, approximately 40 miles southeast of the Chisos (Wood et al. 1999) in montane conifer forests. In Texas, *C. arizonica* has been thought to be restricted to a similar forest type occurring in Boot Canyon (e.g., Warnock & Hinckley 7138, SRSC) within the Chisos Mountains of Big Bend National Park in Brewster County (Vines 1960; Correll & Johnston 1979; Powell 1988; Simpson 1988; Cox & Leslie 1997; Powell 1998). This limited distribution has puzzled phytogeographers (Simpson 1988) as to why *C. arizonica* occurs in the Chisos Mountains but not in other high Trans-Pecos Mountain ranges (e.g., Davis and Guadalupe).

Cupressus arizonica has been recently collected from The Nature Conservancy's Davis Mountains Preserve in the Davis Mountains of Jeff Davis County. The location is a steep, forested canyon at an elevation between 2072 and 2103 m. It was found just below Bridge Spring (Mt. Livermore, 7.5 min, USGS topographic quad). The canyon floor is mesic with permanently saturated soils from the spring. This drainage is an eastern headwater tributary of Madera Creek and Canyon which drains the north slopes of Mount Livermore, the highest summit of the Davis Mountains. The canyon is north trending, shaded and steep enough to maintain a cool, mesic microclimate compared to the much more xeric south and west facing drainages nearby. The primary community type is pinyon-oak-juniper forest with gray oak (*Quercus griseus*), alligator juniper

(*Juniperus deppeana*), Texas madrone (*Arbutus xalapensis*), some Gambel's oak (*Q. gambeli*), silverleaf oak (*Q. hypoleucoides*), southwestern chokecherry (*Prunus serotina*), and three species of pine, Mexican pinyon (*Pinus cembroides*), ponderosa (*P. ponderosa*), and southwestern white pine (*P. strobiformis*). Our collection, from an isolated tree, indicates a more widespread distribution (possibly dating back to Pleistocene) as suggested by Cox and Leslie (1997), as well as a more continuous distribution of *C. arizonica* with both Texan and Mexican populations to the south and New Mexico, Arizona, and California populations to the north and west. This newest specimen agrees in habitat with previous collections. Isolated, forested, canyon bottoms at high elevations, associated with springs, are habitat characteristics which appear common for this species (Elmore 1976; Correll & Johnston 1979; Powell 1988; Cox & Leslie 1997; Powell 1998; Watson & Eckenwalder 1993). *Cupressus arizonica* has been extensively planted as ornamentals and wind-breaks throughout the Trans-Pecos (Powell 1988, 1998), and may be considered the most widely planted tree in west Texas (Simpson 1988). While introduction through ornamental stock remains possible, the height, overall size, and habitat of the tree is comparable to those within the Chisos. This may indicate that the Davis Mountain collection is a post-Pleistocene relictual fragment of a more extensive Texas population resulting from the extension of this species' natural distribution. Our on-going investigations in the Davis Mountains and other insular West Texas mountain ranges will continue to elucidate the pattern of distribution and differentiation among species of Cupressaceae including *Cupressus* and *Juniperus*.

Voucher specimen: **TEXAS. Jeff Davis Co.:** Bridge Gap Spring, ca. 75 ft downstream from spring box, ca. 40 ft tall, 20 Jun 1998, J.P. Karges & L.K. Hedges 2480 (SRSC).

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